

## **Publications**

Lymanagrover, J.R., Valego, N.K., Shilling, R.D. (1988). Rat Adrenal Zona Fasciculata Cell Electrophysiological Responses to ACTH and Gamma MSH Vary with Age. *Mechanisms of Ageing and Development*, 43, 269-278.

Shilling, R.D. (1989) Backward recognition masking in musicians and nonmusicians. Master's thesis, University of North Carolina at Greensboro.

Shilling, R.D., Soderquist, D.R. (1990). Auditory backward recognition masking: Effect of interaural phase on masker efficacy. *Perception and Psychophysics*, 47, 332-336.

Soderquist, D.R., Shilling, R.D. (1990). Loudness and the binaural masking level difference. *Bulletin of the Psychonomic Society*, 28, 553-555.

Soderquist, D.R. and Shilling, R.D. (1990). Forward masking in young children: Rocketship Psychophysics. *American Psychological Society*, 54 (a).

Soderquist, D.R. and Shilling, R.D. (1991). Backward masking in children and adults. *Association for Research in Otolaryngology*, 337(a).

Shilling, R.D. (1992). Backward detection and discrimination unmasking: Suppression or cueing? Doctoral thesis, University of North Carolina at Greensboro.

Soderquist, D.R., Shilling, R.D. (1992). Forward masking in young children: Rocketship psychophysics. *Current Psychological Research and Reviews*, 11, 145-156.

Shilling, R.D. and Soderquist, D.R. (1994). Backward detection and discrimination unmasking: Suppression or cueing? *Association for Research in Otolaryngology*, 280(a).

Shilling, R.D. and Thomas, G.B. (1994). The effect of double hearing protection on speech intelligibility in a simulated aircraft noise environment. *Journal of the Acoustical Society of America*, 95(a), 2994.

Tyler, R. R., Shilling, R.D., and Gilson, R.D. (1996) False Alerts in Naval Aircraft: A Review of Naval Safety Center Mishap Data. NAWCTSD Technical Report.

Soderquist, D.R. and Shilling, R.D. (in review). Backward masking in children and adults. *Psychological Science*.

Haas, E. C., Gainer, C., Wightman, D., Couch M., and Shilling, R.D. (1997) Enhancing System Safety with 3-D Audio Displays. *Proceedings of the Human Factors and Ergonomics Society 41st Annual Meeting*. 868-872, Albuquerque, NM.

Shilling, R.D., Wightman, D., Couch M., Beutler, R. and Letowski, T. (1998) The Use of Spatialized Auditory Displays in an Aviation Simulation. *Proceedings of the 16th Applied Behavioral Sciences Symposium*, Colorado Springs, CO.

Shilling, R.D., & Letowski, T. (in preparation). Tri-service cooperation in advanced auditory display research. *Army Research Labs Technical Briefs*.

Shilling, R.D., Letowski, T., Wightman, D., & Storms R. (1998). Tri-service cooperation in advanced auditory display research. *Proceedings of the 40th Department of Defense Human Factors Engineering Technical Advisory Group Meeting*, Alexandria, Va.

Shilling, R.D., & Vause, N. (1999). Tri-service cooperation, a key aspect of ARL-HRED spatial audio research. *Focus Army Research Laboratory*, vol 5, no 5.

Shilling, R.D. , Letowski, T. (2000). Spatial Auditory Displays. “What is essential for Virtual Reality to meet military performance goals”, NATO Workshop, The Hague, The Netherlands.

Shilling, R.D. (2000). Improving emotional content and situational awareness in VE using spatial auditory displays. Proceedings of the 44th Department of Defense Human Factors Engineering Technical Advisory Group Meeting, Alexandria, Va.

Shilling, R.D. (Accepted). Challenges and Advantages of Implementing Spatial Auditory Displays. Proceedings of the 72<sup>nd</sup> Annual Aerospace Medical Association Meeting, Reno, N.V.

### **Book Chapters**

Shilling, R.D., Shinn-Cunningham, B. (in press). Virtual Auditory Displays. Virtual Environments Handbook, Kaye Stanney,. New York, Erlbaum.

### **Presentations**

Shilling, R.D. Opening Address for the Psychology conference at the University of North Carolina at Greensboro, Greensboro, 1987.

Shilling, R.D., Soderquist, D.R. Backward Recognition Masking. Presented at the North Carolina Acoustical Society, 1988.

Shilling, R.D., Soderquist, D.R. Backward Recognition Masking: Effects of Interaural Phase on Masker Efficacy. Presented at the Association for Research in Otolaryngology Midwinter Meeting, 1989, Clearwater Beach, FL.

Shilling, R.D. Arcade Psychophysics: Methods, Objectives, and Concerns. UNCG Psychology Conference Presentation, 1989, Greensboro, NC.

Soderquist, D.R., Shilling, R.D. Forward masking and auditory filter widths in young children. Presented at the American Psychological Society Meeting, 1990, Dallas, Texas.

Soderquist, D.R., Shilling, R.D. Rocketship Psychoacoustics: Part II. Presented at the North Carolina Acoustical Society, 1990, Raleigh, N.C.

Soderquist, D.R., Shilling, R.D. Backward masking in children and adults. Presented at the Association Research in Otolaryngology meeting, 1991, St. Petersburg Beach, FL.

Shilling, R.D., Thomas, G.B. The effect of double hearing protection on speech intelligibility in a simulated aircraft noise environment. Presented at the 127th Meeting of the Acoustical Society of America, 1994, Cambridge, MA.

Shilling, R.D. Concerns for the Application of Virtual Audio. Presented at the 33rd Department of Defense Human Factors Engineering Technical Advisory Group Meeting, 1994, Orlando, FL.

DeAngelis, D., Shilling R.D., Rupert A., & McGrath, B. Using 3-D Auditory Cues in a Rotary-Motion Environment. Proceedings of the 16th Applied Behavioral Sciences Symposium, 1998, Colorado Springs, CO.

Shilling, R.D. , Letowski, T., & Storms R. (2000). Spatial Auditory Displays for use within Attack Rotary Wing Aircraft. Proceedings of the International Conference on Auditory Displays, April 2000, Atlanta, Ga.

Shilling, R.D., Storms, R.L., and Letowski, T. (2000). Applications of Spatial Audio Displays For Use Within Attack Rotary Wing aircraft, 22<sup>nd</sup> Annual Army Science Conference, Baltimore, MD.

Shilling, R.D. (2001) Experimental Psychology in the Military: Lessons Learned from the Entertainment Industry. Colloquium at U.C. Santa Cruz. Oct. 2001

### **Research Grants**

2002-Present	Office of Naval Research VIRTE \$400k to help implement collaborative virtual environment for Navy & Marine expeditionary warfare.
2002-Present	Office of Naval Research Navy International Cooperative Opportunities in S&T Program (NICOP). Synergistic Visual, Audio, and Tactile Spatial Awareness Display \$55k for Bulgarian and Czech Republic Researchers to conduct study at NAMRL.
2001-Present	Office of Naval Research Aviation Medical S&T \$73k to design an audiometric measure of sound localization for the design, implementation and evaluation of spatialized auditory displays.
2001-Present	Office of Naval Research \$100k to explore the design of auditory displays. Collaborative project between NPS, SPAWAR, and NSMRL.
2001	N6M \$65K to upgrade virtual environments CAVE for MOVES Institute
1998-2000:	Office of Naval Research \$15K to explore 3-D auditory cueing to enhance the sense of immersion in a variety of virtual environment applications.
1998-2000:	Air Force Office of Scientific Research (AFOSR) \$5k to examine the role of monitoring on task acquisition.
1996-1998	NAVAIR PMA-205 \$60K grant to ascertain appropriate ways to implement 3-D auditory cues in aircraft and aircraft simulations.